

REMARKS

Claims 1-2, 4-8, 1—23, 25-27, 29-31, 33, 36-41, and 48-52 are pending in the application. Claims 19-22 and 48-52 are withdrawn from consideration. Claims 1-2, 4-8, 10-18, 23-27, 29-31, and 33-41 are rejected. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-2, 4-5, 8 and 10-11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Arino et al. (U.S. Pat. No. 4,689,958). Claims 1-2, 5, 8, 10-11 and 23-26 stand rejected as being anticipated by Logan (U.S. Pat. No. 3,279,517). Claims 23-25 and 29-30 stand rejected as being anticipated by Irimies (U.S. Pat. No. 5,493,833). Claims 23-26, 29-31, 33-35, and 37-41 stand rejected as being anticipated by Bregenzer et al. (GB Application 2,065,011). These rejections are respectfully traversed.

In the rejections of Claims 1-2, 4-5, 8 and 10-11 under 35 U.S.C. § 102(b), the Office characterizes the Arino (U.S. Pat. No. 4,689,948) reference as teaching a head having a web portion with an annular weldment area. Furthermore, the Office characterizes the annular weldment as having a second thickness less than approximately 20-35% of the thickness between the top and bottom surface of the head. Applicants respectfully traverse this characterization.

Applicants note that the Arino reference is completely silent as to and does not clearly show an annular weldment portion. In this regard, the Arino reference at best

only shows a cross-section of the head having a pair of protrusions therefrom. Furthermore, Applicants respectfully submit that the Arino reference is completely silent as to the thickness of the weldment area. There simply is no teaching in the reference as asserted that the weldment area is annular or that the second thickness is less than an approximately 20-35% of the first thickness of the surface of the head.

The Examiner's attention is respectfully directed to independent Claims 1 and 8. These claims have been amended to clarify that the annular weldment area is disposed on a bottom surface of the fastener head, while the shank is on an obverse top surface. Applicants note that the Arino reference clearly does not show this limitation.

The Office rejects Claims 1-2, 5, 8, 10-11 and 23-26 as being anticipated by Logan (U.S. Pat. No. 3,279,517). In the rejection, the Office states that the Logan reference teaches a weldable fastener having a head and a weld portion with an annular weldment area between an annular weldment surface and a bottom surface of the head. The Office further states that the annular weldment area has a second thickness less than an approximately 20-35% of the first thickness between the top and bottom surface of the head. Applicants respectfully traverse this characterization.

The Examiner's attention is respectfully directed to column 1, lines 67-72 of the Logan reference. As clearly stated, around a central recess of the bolt head are alternating peaks (15, 16, 17 and 18) and valleys (19, 20, 21 and 22) evenly spaced in succession circumferentially around the bolt axis. Further, the peak is connected about the circumferential edge of the head by rounded corners (15a and 17a). As such, the peaks shown on the weld bolt do not form an annular weldment area as asserted by the

Office Action. Further, Applicants respectfully submit that the Logan reference does not teach a "flat" annular weldment area as claimed.

Claims 23-25, and 29-30 stand rejected under 35 U.S.C. §102(b) as being anticipated by Irimies (U.S. Pat. No. 5,493,833). The Office states that the Irimies reference teaches a weldable fastener having a substantially annular portion having a second thickness which is 20-35% of the thickness of the head thickness. Applicants respectfully traverse this characterization. Applicants notes that Chart A of the Irimies reference shows an annular portion having a thickness which is 40% of the total head thickness. Further, Applicants respectfully submits that the structure cited in the Irimies reference by the Examiner is not an annular weldment section. In this regard, the Examiner's attention is directed to Figure 1 and accompanying text related to element (18) which shows that the stud is specifically configured to be welded at the obverse side of the head. In this regard, the Examiner's attention is directed to Figures 5 and 6 which show the utilization of the integral head portion (14) which is used as a structural member to couple cement to a steel base member (50). As such, the stud of the Irimies reference would not be satisfactory for its intended purpose should the head portion 14 be used as a weldment portion.

Claims 23-26, 29-31, 33-35, and 37-41 stand rejected as being anticipated by Bregenzer et al. (GB Application 2,065,011). The examiner's attention is directed to Claims 23 and 35. Independent Claim 23 has been amended to clarify the annular section has a thickness which is 20% to 35% of the head thickness. Applicants submit that the weldment portion 28 of the Bregenzer reference is not between 20% to 35% of the total head thickness, $(20 + 24 + 28)$.

The examiner's attention is directed to independent claim 31 which has been amended to include the limitations "wherein the head comprises a web portion and wherein said shank has a first failure load, and the web portion has a second failure load greater than the first failure load." The Office action asserts that "It is inherent that the smaller cross-section shank (10), has a first failure load less than a second failure load of the cross-section web (22). Applicant strongly traverses this characterization. Applicant notes that torsional loading of the weld stud causes weld studs to fail at the web portion. In this regard, applicant asserts that it is not "inherent" that the stud would fail at the head at a load less than the failure load of the stud. Applicant submits that those skilled in the art would recognize that a significant reduction in web thickness would lead to torsional failure of the web. A view of the text and figures of the Bregenzer would therefore not suggest the web fails at a load more than the stud.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-2, 4-8, 10-12, 14-18, 23-27, 29-31, and 33-41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 03/042554 A1 in view of Bregenzer et al. and WO 03/004883 A1. The Examiner states that this reference suggests a weld stud and stud to structure combination comprising every structural element contained in Claims except for the relative size and dimensions. The Examiner further states "Although it appears the reference is silent about relative failure loads, it would be apparent to those of ordinary skill, that these are limitations inherent to the WO

03/004883 disclosure.” Applicants strongly traverse this characterization. Applicants respectfully assert that, as admitted by the Examiner, this particular reference is completely silent as to the dimensional limitations of each of these claims. Additionally, as admitted by the Examiner, this reference is completely silent as to the respective failure loads for each of the elements as claimed. Further, the Examiner has offered no showing that the failure loads of the claimed invention are inherent in the cited reference. To the extent the Examiner is attempting to take notice to the inherency of these properties, Applicants respectfully traverse and request further support be provided.

The Examiner cites the figure 7 of the instant application and figure 4 of the WO 03/042554 reference as showing the instant invention does not “perform differently.” Applicant directs the examiner’s attention to Paragraph [65] of the instant application. As shown, the web thickness 21 can be adjusted so that it has a breaking moment of the web thickness 21 is between the breaking moment of the stud shank M_g and the breaking moment M_s of the weld joint 22. This failure load is not shown on the cited chart.

With respect to the rejection of claims 14-18, 23-27, 29-31, and 33-41, applicant respectfully submits the references cited by the examiner do contain all of the limitations of the independent claims they depend upon. Claim 13 stands rejected over Bregenzer et al. in view of WO 03/004883 A1 as discussed above, in even further view of Sherry et al. (U.S. Pat. No. 5,579,986). Applicant respectfully submits the references cited by the examiner do contain all of the limitations of claim 11 which Claim 13 depends upon. As such rejection under 35 U.S.C. § 103(a) is improper.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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